Comments:

Additional training for FCC requirements. Supplement to prior approval previously granted for ISO/IEC 17025

ACLASS Signature: [redacted] **Date: September 26, 2008**

ASSESSOR/EXPERT APPROVAL CHECKLIST

Assessor Name: [redacted]	Date of Review: September 25-26, 2008

Standard(s) Approved For:

☒ ISO/IEC 17025

☐ ISO/IEC 17020

☐ ISO Guide 34 (RMP)

Requirement	Compliant	Evidence/Documentation/Comments
Education	☒ Yes ☐ No	
Training	☒ Yes ☐ No	ACLASS policies and procedures and FCC requirements including use of the FCC Accredited Test Laboratory Technical Assessment Evaluation Checklist and the series of documents that are a non-exclusive list of measurement techniques that may be used when testing equipment to determine its compliance with FCC rules.
Work Experience	☒ Yes ☐ No	
Assessment Experience	☒ Yes ☐ No	NVLAP assessment experience. Will need to go through normal process to become an ACLASS assessor but qualified as an expert and can participate on assessment accompanied by a lead assessor
Uncertainty Training/Experience	☒ Yes ☐ No	
PT/ILC Training/Experience	☒ Yes ☐ No	
Understanding of Traceability	☒ Yes ☐ No	
ACLASS Procedures Training	☒ Yes ☐ No	
ARP Process Training	☐ Yes ☒ No	N/A
Is Witnessing Required?	☒ Yes ☐ No	Will need witnessing if want to become lead assessor
Additional Training Required?	☒ Yes ☐ No	Ongoing training for continuous improvement. Expect more training at 2009 annual forum
Conduct Primary Standard Assessments (High Precision Level)?	☒ Yes ☐ No	

Senior Accreditation Manager(s) Approval:	☐ Lead Assessor	☐ Assessor	☐ Reviewer	☒ Expert

Comments:

Additional training for FCC requirements. Supplement to prior approval previously granted as an expert.

ACLASS Signature: [redacted] **Date: September 26, 2008**

創新科技署
Innovation and Technology Commission
香港特別行政區政府
The Government of the Hong Kong Special Administrative Region

Ref. : QP 401/1 & QP 401/2
Tel No. : (852) 2829 4819
Fax No. : (852) 2824 1302

13 February 2007

Mr Keith Greenaway
Executive Vice President/COO
ACLASS
2009 N.14th Street, Suite 502
Arlington VA 22201
UNITED STATES OF AMERICA

Dear Mr Greenaway,

Toys and Children's Products Safety Ordinance (Cap 424) and Consumer Goods Safety Ordinance (Cap 456)

Notification of Approved Testing Services

In view of the mutual recognition arrangement concluded between your Organisation and the Hong Kong Accreditation Service which provides accreditation for laboratories through the Hong Kong Laboratory Accreditation Scheme (HOKLAS), I am pleased to inform you that a laboratory you have accredited in respect of tests on products which are classified as toys, children's products and consumer goods under the Toys and Children's Products Safety Ordinance (TCPSO) and the Consumer Goods Safety Ordinance (CGSO), Laws of the Hong Kong Special Administrative Region (HKSAR), is an "approved laboratory" for the purpose of the two Ordinances, subject to the definition and conditions given in the following paragraph.

2. Under section 9(1) of the TCPSO and section 2 of the CGSO, "approved laboratory" means a laboratory approved in writing by the Commissioner for Innovation and Technology of the Government of the HKSAR for the purpose of testing toys and children's products and to conduct specified tests on consumer goods respectively under the Ordinances. The Commissioner has approved the following categories of laboratories as "approved laboratories" for the purpose of the two Ordinances :

/.....

- all laboratories accredited under HOKLAS; and
- all laboratories accredited under those Schemes which have concluded mutual recognition agreements with HOKLAS,

subject to the following conditions :

- this approval is confined to those tests in respect of which the laboratories are accredited and the results of which are issued on test reports or certificates bearing the logo or accreditation mark of the Scheme granting the accreditation;
- the approval in respect of a laboratory automatically lapses once its accreditation is terminated. Where the termination is only in respect of a particular test or tests, this approval in respect of that test or those tests automatically lapses upon the termination of accreditation;
- this approval in respect of all those laboratories accredited under a Scheme which has concluded a MRA with HOKLAS automatically lapses once the MRA is terminated; and
- the Commissioner for Innovation and Technology reserves the right to terminate this approval in respect of any laboratory whenever he sees fit.

3. I would be most grateful if you would inform your accredited laboratories of the above. For details, your accredited laboratories may wish to refer to the links http://www.itc.gov.hk/en/quality/psis/srca/toys.htm and http://www.itc.gov.hk/en/quality/psis/srca/consumergoods.htm for details on the standards, regulations and conformity assessment requirements in Hong Kong for toys and children's products and consumer goods respectively, and http://www.legislation.gov.hk/eng/home.htm for details of the two Ordinances. Further enquiries may be directed to our office at (852) 2829 4815 or psib@itc.gov.hk.

Yours sincerely,

(S. S. Chan)
for Commissioner
for Innovation and Technology

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 19, 2007

Mr. Keith Greenaway
President/CEO
ACLASS Accreditation Services
2009 North 14th Street, Suite 502
Arlington, VA 22201

SUBJECT: REPLY TO YOUR LETTER DATED SEPTEMBER 26, 2007, SEEKING AGENCY ASSISTANCE IN ACCEPTING ACLASS ACCREDITATION SERVICES

Dear Mr. Greenaway:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter dated September 26, 2007. You request that NRC provide assistance in accepting ACLASS Accreditation Services (ACLASS) as an acceptable body for the accreditation of commercial calibration laboratories as stipulated in American National Standards Institute/International Organization for Standardization/International Electrotechnical Commission (ANSI/ISO/IEC) 17025, "General Requirements for the Competence of Testing and Calibration Laboratories." You state that ACLASS accreditations are equivalent to those accreditations issued by the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Association for Laboratory Accreditation (A2LA), which the NRC does accept.

On September 28, 2005, the NRC approved a request from Arizona Public Service Company (APS), in accordance with the regulations in Section 50.54(e)(4) of Title 10 of the *Code of Federal Regulations* (10 CFR), which proposed a change to the Quality Assurance Program (QAP) for the Palo Verde Nuclear Generating Station (PVNGS). The proposed change provided for use of accreditation of commercial-grade (as defined by 10 CFR Part 21, "Reporting of Defects and Noncompliance") calibration services by a nationally-recognized accrediting body, using procedures consistent with international standards and guidelines, specifically those found in ANSI/ISO/IEC 17025. In its QAP change, APS stated that nationally-recognized accrediting bodies include NVLAP and other accrediting bodies recognized by NVLAP through a Mutual Recognition Arrangement (MRA). The staff understood this statement to include other accreditation bodies accepted as signatories to the International Laboratory Accreditation Cooperation (ILAC) MRA.

You also assert that current NRC policy stipulates NVLAP and A2LA as the only acceptable accreditation bodies. Each nuclear power plant licensee has the responsibility to decide which suppliers to select, approve, and maintain. The NRC discussed NVLAP and A2LA in the safety evaluation (SE) for APS only in the context of NRC's overall approval of the QAP changes to PVNGS QAP. This was not an endorsement or approval of such organizations, only recognition that the NRC finds the NVLAP and A2LA accreditation programs to be acceptable. As such, the staff concluded the following: (1) both accreditation bodies provide an acceptable alternative to APS's qualification of commercial-grade calibration service suppliers, and (2) the PVNGS QAP,

as described in Section 17 of the APS Updated Final Safety Analysis Report, continues to satisfy the requirements of Appendix B to 10 CFR Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." In the SE, the staff concluded that both NVLAP and A2LA provide alternatives to the methods used by APS to qualify suppliers of commercial-grade calibration services. At the time, the NRC limited its review and approval of the requested QAP changes to NVLAP and A2LA because both organizations were domestic signatories (full members) to the ILAC MRA. Since ACLASS became a signatory on September 14, 2006, almost 1 year after the issuance of the staff's SE, the staff did not consider ACLASS in its review

The staff recognizes that ACLASS now is a domestic signatory to the ILAC MRA. Additionally, on December 13, 2007, the NRC met with ACLASS staff to understand how ACLASS accreditations are equivalent to the accreditations provided by NVLAP and A2LA. Based on our understanding of the ACLASS accreditation process and your current status as an ILAC MRA signatory, the staff considers ACLASS to be another alternative to the methods used by licensees to qualify commercial-grade calibration service suppliers.

Should you have any questions, please contact Dale Thatcher at (301) 415-3260.

Sincerely,

for

Patrick L. Hiland, Director
Division of Engineering
Office of Nuclear Reactor Regulation

Approved Lead Assessor

Educational Experience:

- Ph.D. Electrical and Computer Engineering, SUNY at Buffalo (1990)
- M.S. Electrical and Computer Engineering, SUNY at Buffalo (1987)
- B.S. Electrical and Electronic Engineering, National Cheng Kung University
- Teaching Assistant for Electromagnetic theory
- Instructor for Electronic Circuits

Experience

- Electrical Measurement Laboratory Manager at Center for Measurement Standards/National Measurement Laboratories (Taiwan)
- Hewlett Packard/Agilent Technologies Standards Laboratories Manager
- Anritsu Company, Manager
- Chinese National Laboratory Accreditation (CNLA)-Taiwan Power Company and Tatung Electrical Company
- Microwave an RF power, noise, attenuation, coaxial/waveguide airline impedance and dimensional measurements, frequency and time, modulations, phase noise, phase MCP for Power Sensors
- Member of ANSI/NCSLI Z540 writing committees
- IEEE Instrumentation and Measurement Society TC-4 Chair-HF Measurement
- Quantum Hall resistance standards, Josephson junction voltage standards, Cesium fountain clock, Fused silica capacitance standards, DC/AC voltage/current standards, AC TVC/TCC standards, Inductive voltage divider, High voltage/current standards, Frequency and Time standards, AC waveform standards, HF impedances, Twin-Twin bridge (-200 MHz), Maxwell-Wien bridge (inductance/capacitance measurement), DMM/DVM
- APMP Inter-laboratory Comparison: Capacitance and Resistance

Technical Papers/Books/Publications:

- Taiwan Electrical and Electronic Manufacturer's Association on EMC Directive
- Chroma Precision Instrument Company on Conforming to CE Marking for EMC Directive
- Recent Progress and Implementation of CALS to the Research and Development in the Medical Devices Industries, CALS Expo International 1997, Tokyo.
- Value-Based Supply Chain for Enterprise Integration-From the Customer's View, CALS Expo International 1997, Tokyo.
- Launching Medical Devices Industry in the Asia-Pacific Region, Sept. 26, 1996, Medium/Small-Sized Companies' International Technology Conference 1996, Japan.
- Instrument Development and Future Metrology Trend/The Second Cross-strait Conference, 1997
- Technical Development in the Medical Device Industry/2WMEC, 1996
- Report on the Survey of Calibration Needs in Taiwan/ Chinese Metrological Society
- National Strategy for Metrology Program at the Conference dedicated to the NBS 50th Anniversary, 1996
- Advanced Sensor Technology Developing Strategy in Taiwan/ Chinese Metrological Society
- Introduction to Quantum Metrology at CMS/ITRI, Chinese Physics Society, 1991.

- Experiences and Applications of Adopting the ARFTG MCP Kit in the Network Analyzer Measurement Assurance Program
- Innovative Measurement Technique for Characterizing Electro-Optical Components
- Traceability for Broadband VNA and Compatibility Study of Waveguide (WR-10) and 1mm Coaxial Measurements
- Accuracy Study on the Newly Introduced Anritsu W1-Connector Calibration and Verification Kit
- Evaluation of Coaxial V-Connector LRL Impedance Standards for the 65 GHz Vector Network Analyzer
- Mismatch Errors in Microwave Power Measurement and Uncertainty Computation Based on the GUM Guidelines
- Functional Tests for Peak Power Sensor and Meter
- How to Compute Uncertainty for ANA Based on the ISO TAG 4 Guideline
- Realizing Integration of Metrology, Quality, and Instrument Development and Support with Information System
- Microwave Coaxial Impedance Standards and Measurement Accuracy from 40 GHz and Beyond
- Understanding the Reference Level Accuracy in the Advanced Spectrum Analyzer
- More Accurate Method to Measure the Frequency Deviation of the Modulated Signals with Modulation Index <<0.2
- Improved Uncertainty for the Noise Source Based on the Adapter Removal Methods
- Improved Thermal Processing of MOS Diodes on n-InP, Second International Conference on InP and Related Materials for Optical Devices and Advanced Electronics, 1990
- Processing-Induced Conduction Mechanisms in Metal-Insulator-Semiconductor Diodes on n-InP, IEEE Journal of Electronic Materials, Vol. 19, No. 6, 1990.
- Electronic Properties of MIS Diodes on InP Controlled by Surface Preparation, 1990 Annual Meeting of TMS
- High-barrier height metal-insulator-semiconductor diodes on n-InP, J. Appl. Phys. 65(10), 4051 (1989)
- Interface Properties of High Barrier MIS Diode on InP, SPIE Vol. 1144, First International Conference on Indium Phosphide and Related Materials for Advanced Electronic and Optical Devices (1989), PP 217-220.
- Tunneling Metal-insulator-semiconductor Structures on InP, 1989 Electrochemical Society Meeting
- Current Transport in MIS Diodes on n-InP, 1989 Electronic Materials Conference, MIT
- Electrodes for Functional Neuromuscular Stimulation, The Materials Research Society 1987 Fall Meeting, P342.
- Shallow Levels, Deep Levels and Electrical Characteristics of Zn-doped GaInP/InP, Journal of Applied Physics, 67, 3711, 1990.
- Deep Levels in InP by DLTS and TSCAP: Survey and Recent Data, SPIE Vol. 1144, First International Conference on Indium Phosphide and Related Materials for Advanced Electronic and Optical Devices (1989), P61.
- Effects of Surface and Bulk Defects in InP", Material Research Society Symposium Proceedings, Vol. 104, 1988, PP 491-494.
- W. A. Anderson, A. Singh, K. Jiao, and B. Lee, "Deep Level and Radiation Effects in p-InP, Space Photovoltaic Research Technology Conference/NASA, 1988.

- Electron-beam Damage in MOS Structure with Ultra-thin Oxides", First Workshop on Process-related Electrically Active Defects in Semiconductor-insulator System, MCNC, 1987.

Cooperative Agreements Maintained:

- Exchange of Letter between Food and Drug Administration and Ministry of Health, 1998.
- Guidelines for a Cooperative Program in Physical Sciences between The American Institute in Taiwan and The Taipei Economic and Cultural Representative Office in the United States, 1997.
- Technical Support Agreement between CMS and Kaoushiung General Veteran Hospital, 1997.
- Technical Support Agreement between CMS and National Yang-Ming University, 1997.
- Memorandum of Understanding of Product Certification on Medical Devices between Nmi and CMS, 1995.

ILAC MUTUAL RECOGNITION ARRANGEMENT

SIGNATORIES

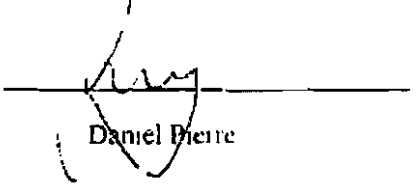
We, the undersigned, endorse the terms of the ILAC Arrangement and undertake, to the best of our ability, fulfillment of its objectives.

Accreditation Body:	Assured Calibration and Laboratory Accreditation Select Services (ACLASS)
Economy:	USA
Scope:	Testing and Calibration
Authorised Representative:	Keith Greenaway

Signature  Date: 14 September 2006

Keith Greenaway

Chairman, ILAC Arrangement Council:

Signature:  Date: 14 September 2006

Daniel Pierre

Accredited Laboratory
FCC Technical Assessment Evaluation
(FCC Requirements: May 12, 2008)

Instructions to the Assessor: This evaluation form addresses specific criteria relating to accreditation of a laboratory to determine the capability and competence of that laboratory to perform tests to show compliance of equipment subject to the FCC EMC Regulations contained in 47 CFR Parts 2, 15, and 18. It is intended for use during the assessment phase of the accreditation process as a guide to evaluate the capability of the prospective laboratory facility and to determine the competency of the laboratory personnel for performing the required measurements. It is not intended to replace the good engineering judgment of the technical assessor or a thorough evaluation of the facility. Other points may and should be added to this checklist as the on-site assessment progresses.

Mark all items you observed and verified at the laboratory. Circle the letter "Y", representing "yes" to show conformance with the criteria. Circle the letter "N", representing "no", to show a deficiency (i.e. nonconformance). If the item is "Not Applicable", circle "N/A". Record an explanation of any deficiency or comment in the space provided.

Customer Name:	
Customer Address:	
Customer Contact:	
Assessor Name(s):	
Date of Assessment:	
Type of Assessment:	☐ AA ☐ SA ☐ RA ☐ Follow-up

I. DOCUMENTATION *(The laboratory should have copies of appropriate FCC Rules, standards and measurement methods based on their scope of accreditation. The following documents may be needed and should be revised as necessary based the laboratory's scope of the accreditation.)*

Compliance			Requirements	Comments
Y	N	N/A	1. C63.2-1996: American National Standard for Electromagnetic Noise and Field Strength Instrumentation, 10 kHz to 40 GHz – Specifications.	
Y	N	N/A	2. C63.4-2003: American National Standard for Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.	
Y	N	N/A	3. C63.7-2005: American National Standard Guide for construction of Open Area Test Sites for Performing Radiated Emission Measurements.	
Y	N	N/A	4. CISPR 16-1-1 – "Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods – Part 1-1: Radio Disturbance and Immunity Measuring Apparatus – Measuring Apparatus."	
Y	N	N/A	5. CISPR 16-1-2 – "Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods – Part 1-2: Radio Disturbance and Immunity Measuring Apparatus – Ancillary Equipment – Conducted Disturbances."	
Y	N	N/A	6. CISPR 16-1-3 – "Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods – Part 1-3: Radio Disturbance and Immunity Measuring Apparatus – Ancillary Equipment – Disturbance Power."	
Y	N	N/A	7. CISPR 16-1-4 – "Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods – Part 1-4: Radio Disturbance and Immunity Measuring Apparatus – Ancillary Equipment – Radiated Disturbances."	

Y	N	N/A	8. CISPR Publication 22 Information Technology Equipment – Radio Disturbance Characteristics – Limits and Methods of Measurement.	
Y	N	N/A	9. 47 CFR Parts 2, 15 and 18, as appropriate (FCC Rules and Regulations)	
Y	N	N/A	10. FCC MP-5-1986: Methods of measurement of radio noise emissions from Industrial, Scientific and Medical (ISM) equipment. (Note: This procedure is only required when the prospective lab is being accredited for measuring ISM equipment. The special conditions and requirements in MP-5 must be taken into consideration, which do not always follow ANSI C63.4.)	

II. MEASUREMENT INSTRUMENTATION				
A. Line Impedance Stabilization Network (LISN)				
Y	N	N/A	11. Are 50 Ω /50 µH LISNs used per ANSI C63.4-2003, Section 4.1.2?	
Y	N	N/A	12. Do the LISNs have an indication of characterization status per ISO/IEC Standard 17025:2005?	
Y	N	N/A	13. Has the impedance and insertion loss of the LISNs been calibrated per ANSI C63.4 Appendix E – Verification of LISN Characteristics, and are the test results within the specified tolerance?	
Y	N	N/A	14. If automated software is used for conducted emissions measurements (and the insertion loss is greater than 0.5 dB) then check if the LISN insertion loss in the calibration report is the same as the software look-up table.	
Y	N	N/A	15. Are the LISN impedance measurements made at the point where the Equipment Under Test (EUT) is connected to the LISN with 50 ohm termination on the instrumentation monitoring port? (Note: Connection of the EUT to the LISN socket or at the end of an extension cord may make a difference in line conducted measurements.)	
Y	N	N/A	16. Are all unused EUT ports appropriately terminated?	
Y	N	N/A	17. Are the LISNs installed and used in accordance with ANSI C63.4-2003, Sections 5, 6 and 7 and MP-5, as appropriate?	

B. Antennas				
Y	N	N/A	18. Does each of the antennas used for compliance measurements comply with the criteria in ANSI C63.4-2003, Section 4.1.5 and MP-5, as appropriate? (Note: Rod and log-spiral antennas are not permitted for FCC type measurements.)	
Y	N	N/A	19. Are the antennas calibrated and labeled in accordance with recommended practices contained in ANSI C63.4-2003 Section 4.4.2?	
Y	N	N/A	20. Is the lab using the antenna factors that are the same for vertical and horizontal polarization (for the same antenna, at the same frequency per ANSI C63.5)?	
C. Measurement Receiver or Spectrum Analyzer				
Y	N	N/A	21. Does the measuring receiver(s) or spectrum analyzer(s) used for final EMC measurements meet the requirements in ANSI C63.4-2003, Section 4.1 or CISPR 16-1-1?	
Y	N	N/A	22. Has the EMI receiver(s) or spectrum analyzer(s) been calibrated? Is there documentation showing calibration per ANSI C63.2 and/or CISPR 16?	
Y	N	N/A	23. For each measuring instrument that is automated, is the software documented and adequate for use? Ask for a demonstration to show appropriate use. (Note: Any loadable parameters inside instruments or automated equipment shall be considered a data transfer and subject to appropriate checks. *i.e.*, latest calibration corrections factors.)	
Y	N	N/A	24. Have the RF Cables, RF Switches, terminators, attenuators and pre-amps been verified in accordance with ANSI C63.4-2003, Section 4.4.5?	

III. TEST FACILITIES				
A. Facilities for Measuring Powerline Conducted Emissions				
Y	N	N/A	25. Is there sufficient power available to perform the required measurements and is the power-line conducted ambient at least 6 dB below the limit per ANSI C63.4-2003, Section 5.1.2?	
Y	N	N/A	26. For each type and size of EUTs to be measured, does each line conducted facility comply with the conditions and requirements of ANSI C63.4-2003, Section 5.2 and MP-5, as appropriate?	
Y	N	N/A	27. For each type of EUT to be measured at this facility, can accurate and repeatable line conducted measurements be performed in accordance with ANSI C63.4-2003, Sections 6 and 7?	
Y	N	N/A	28. Is the vertical conducting plane, if used, installed and used in accordance with ANSI C63.4-2003, Section 5.2.2? Is the vertical plane bonded (3 cm minimum strap width) properly to the horizontal plane (3 bonds minimum)?	
Y	N	N/A	29. Ask for a demonstration or description of how large EUTs are handled. Are the guidelines in ANSI C63.4-2003 (Sections 5 and 6), and MP-5 followed for large EUTs, including in-situ, if appropriate? (Ask the test personnel to explain what special measurements and conditions are required when the power requirement is greater than the rated capacity of the LISN.)	
Y	N	N/A	30. Ask to review the documentation of conducted emission site (calibration, drawings, and pictures)	

B. Facilities for Measuring Radiated Emissions in the frequency range of 30 MHz to 1 GHz				
Y	N	N/A	31. For each type and size of EUTs to be measured, does each radiated emission test facility comply with the conditions and requirements of ANSI C63.4-2003, Section 5.4?	
Y	N	N/A	32. Are LISN(s), filters, and isolation transformers, if used, installed in accordance with ANSI C63.4-2003, Section 5.2.3? Is the LISN bonded to the Ground Reference Plane?	
Y	N	N/A	33. Is the reflecting ground plane in accordance with ANSI C63.4-2003, Clause 5.4.3?	
Y	N	N/A	34. Is the EUT turntable installed and used in accordance with ANSI C63.4-2003, Clause 5.4.4?	
Y	N	N/A	35. Is the antenna positioner installed in accordance with ANSI C63.4-2003, Clause 5.4.5?	
Y	N	N/A	36. Are the guidelines in ANSI C63.7-2005 followed?	
Y	N	N/A	37. Does the radiated emission test site(s) meet the site quality validation requirements of ANSI C63.4-2003, Section 5.4.6? The site quality validation data must meet the ± 4 dB criteria. For alternative test sites, see Section 5.4.6.5.	
Y	N	N/A	38. Check the antenna factor data points from the antenna calibration report and those used for NSA. Do these agree and have they been interpolated properly? Are the vertical and horizontal antenna factors the same (for the same antenna used at the same frequency and distance)?	
Y	N	N/A	39. For each type of EUT to be measured at this facility, can accurate and repeatable radiated measurements be performed in accordance with ANSI C63.4-2003, Sections 6 and 8 for each radiated emission test site?	

Y	N	N/A	40. Ask for a demonstration or description of how large EUTs are handled, if appropriate. Are the guidelines in ANSI C63.4-2003, Sections 6 and 8 and MP-5 followed for large EUTs, including in-situ, if appropriate? (Note: In this case, a large EUT is one that is larger than can be handled on a test site.)	
Y	N	N/A	41. Ask to review the documentation on the OATS (including drawings, pictures, and NSA).	
C. Facilities for Measuring Radiated Emissions in the frequency range of 1 GHz to 40 GHz				
Y	N	N/A	42. For each type of EUT to be measured at this facility, is there a test site for making radiated emissions measurements to the highest frequency required?	
Y	N	N/A	43. Has the test site been evaluated to determine that undesired reflections do not affect the measurements (ANSI C63.4-2003, Section 8.2.4)?	
Y	N	N/A	44. Is the sensitivity of the measurement system at least 6 dB below the applicable limit and have any preamplifiers used to attain this sensitivity been checked to ensure that they do not cause distortion, spurious signals or overload (ANSI C63.4-2003, Section 4.1.5.4)?	
Y	N	N/A	45. Are the beamwidths of the antennas known so that the beamwidth versus size of the EUT can be taken into account (ANSI C63.4-2003, Sections 4.1.5.4, 8.2.4 and 8.3.1.2)? If the Manufacturer's antenna specification sheet is being relied on for the beamwidth data then has the typical beamwidth specification (or data) been considered over the frequency range of the test?	
Y	N	N/A	46. Is there a calibrated frequency meter capable of measuring up to the highest frequency required (ANSI C63.4-2003, Sections 13.1.5 & 13.1.6)?	

IV. EMISSION TESTS				
A. General operating conditions and configurations of the EUT (Require a demonstration and/or description of the testing and setup for all types of equipment to be tested at the facility.)				
Y	N	N/A	47. Does the test engineer have an adequate set of instructions for operation of the EUT? The instructions should include turn-on procedure, turn-off procedure, procedure for setting the proper modes and the method of determining that the EUT is operating properly.	
Y	N	N/A	48. Do the equipment arrangements and operation for each type of equipment follow the general guidelines and procedures in ANSI C63.4-2003, Section 6, and 47 CFR 15.31-15.32?	
Y	N	N/A	49. Is the EUT arrangement, configured with appropriate accessories per ANSI C63.4-2003, Sections 6.1-6.2, and 47 CFR 15.31-15.35?	
Y	N	N/A	50. If there are multiple ports of the same type on the EUT, is each port connected to an additional cable to investigate the additive effect these cables have on the EUT emissions, per ANSI C63.4-2003, Sections 6.1.3, and 47 CFR 15.31?	
B. Powerline conducted emission tests (Require a demonstration and/or description of the testing and setup for all types of equipment to be tested at the facility.)				
Y	N	N/A	51. Are the AC powerline conducted emission tests performed in accordance with the applicable parts of ANSI C63.4-2003, Section 7, and 47 CFR 15.31-15.35 and 15.107?	
Y	N	N/A	52. Does the procedure for using a voltage probe, if required, follow ANSI C63.4-2003, Section 4.1.3?	
Y	N	N/A	53. If a voltage probe is required, can the test personnel provide an adequate explanation of when and how it is used?	

Y	N	N/A	54. Are all surfaces of the EUT (both floor-standing and table-top systems) at least 80 cm from any other conducting surfaces, including all LISNs per ANSI C63.4-2003, Sections 6 and 7?	
Y	N	N/A	55. Is the conducted emission test setup in accordance with Figure 10(a) for a table-top EUT and Figure 10(b) for a floor-standing EUT of ANSI C63.4-2003, Sections 6 and 7?	
Y	N	N/A	56. Is the excess power cord length between the EUT and the LISN folded back and forth in a serpentine bundle, located in the center of the power cord, not to exceed 40 cm? (If non-flexible power leads are used, refer to Section 7.2.1 of ANSI C63.4-2003 for acceptable criteria.)	
Y	N	N/A	57. Is the EUT connected to one LISN and all the peripherals connected to at least one other LISN?	
Y	N	N/A	58. Based on exploratory tests, does this conducted emission compliance test represent the maximized cable configuration and worst case mode of EUT operation yielding the highest levels?	
Y	N	N/A	59. For each type of EUT, are the correct frequency ranges measured and the correct detectors and bandwidth used per MP-5, 47 CFR 15.33 and 15.35?	
Y	N	N/A	60. For a personal computer or associated peripheral, was the step-by-step guidance in ANSI C63.4-2003, Annex D adequately followed?	
Y	N	N/A	61. For an unintentional radiator, other than ITE (*e.g.*, receiver or TV interface device), was the step-by-step guidance in ANSI C63.4-2003, Annex G adequately followed?	

Y	N	N/A	62. For an intentional radiator (*e.g.*, remote control and security transmitter) was the step-by-step guidance in ANSI C63.4-2003, Annex H adequately followed?	
B. Radiated emission tests (Require a demonstration and/or description of the testing and setup for all types of equipment to be tested at the facility.)				
Y	N	N/A	63. Are the radiated emission tests performed in accordance with ANSI C63.4-2003 Sections 8, 11, etc. and the FCC Rules (*e.g.*, 47 CFR 15.31-15.35)?	
Y	N	N/A	64. Do the procedures for handling ambient emissions, if appropriate, follow the guidelines in ANSI C63.4-2003, Section 5.1.2 and good engineering practice, when appropriate?	
Y	N	N/A	65. Are exploratory (when appropriate) and final radiated measurements made in accordance with the guidance in ANSI C63.4-2003, Sections 8.3, 11 and Annex C?	
Y	N	N/A	66. Is the radiated emission test setup in accordance with Figure 11(a) for a table top EUT and Figures 11(b), 12a, and 12b for a floor standing EUT?	
Y	N	N/A	67. For Information Technology Equipment (ITE), is the EUT setup operated and tested in accordance with the procedures in ANSI C63.4-2003, Section 11? (Note: Personal computers and associated peripherals should be tested in accordance with ANSI C63.4-2003, Annex D.)	
Y	N	N/A	68. Are unintentional radiators, other than ITE, tested in accordance with the requirements in 47 CFR 15.31 and the procedures in ANSI C63.4-2003, Section 12 and Annex G and MP-5?	

Y	N	N/A	69. Are EUTs that are intentional radiators tested in accordance with the requirements in 47 CFR 15.31 and the procedures in ANSI C63.4-2003, Section 13 and Annex H?	
Y	N	N/A	70. Based on exploratory tests, does this radiated emission compliance test represent the maximized cable configuration and worse case mode of EUT operation yielding the highest levels?	
Y	N	N/A	71. For each type of EUT, are the correct frequency ranges investigated and the correct detectors and bandwidth used per 47 CFR 15.33 and 15.35?	
Y	N	N/A	72. For products in which CISPR 22 is used to show compliance with 47 CFR Part 15, are the measurements made in accordance with 47 CFR 15.109(g)?	
Y	N	N/A	73. For a personal computer or peripheral, was the step-by-step guidance in ANSI C63.4-2003, Annex D adequately followed?	
Y	N	N/A	74. For an unintentional radiator other than ITE (*e.g.*, receiver or TV interface device,) was the step-by-step guidance in ANSI C63.4-2003 Annex G adequately followed?	
Y	N	N/A	75. For an intentional radiator (*e.g.*, remote control and security transmitter), was the step-by-step guidance in ANSI C63.4-2003, Annex H adequately followed?	
Y	N	N/A	76. Ask for a demonstration of radiated emission and other required measurements for each type of product within the scope of accreditation. Do the testing personnel, during the demonstration, use the correct application notes and precautions; *e.g.*, for overload and ambient conditions? (Such demonstrations may be combined with other requested demos.)	

Y	N	N/A	77. Ask for uncertainty calculations procedure and explanations of contributing factors for radiated emission.	
V. TEST REPORTS (Assessor should request to review several sample test reports for various types of products)				
Y	N	N/A	78. Does each of the test reports contain all the information requested in ANSI C63.4-2003, Section 10, and Part 2 (and other applicable Parts) of the FCC Rules?	
Y	N	N/A	79. Is the standard to which the EUT was tested clearly referenced in the test report, per ANSI C63.4-2003, Section 10.1.1? If an alternative procedure was used, are the deviations clearly defined and justified per ANSI C63.4-2003, Section 10.1.9?	
Y	N	N/A	80. Is the rationale for selecting and arranging the EUT clearly stated and are the components of the EUT system clearly identified per ANSI C63.4-2003, Section 10.1.2?	
Y	N	N/A	81. Can a regulatory agency or reasonably competent test engineer duplicate the test results from the description of the EUT and test setup? Are there adequate photographs and descriptive material included in the report per ANSI C63.4-2003, Section 10.1.12?	
Y	N	N/A	82. Does the measurement report include a sample calculation with all conversion and correction factors used?	
Y	N	N/A	83. Is the test report signed in accordance with ANSI C63.4-2003, Section 10.1.11?	
Y	N	N/A	84. Is the test report signed in accordance with the requirements of the accrediting body?	

VI. PERSONNEL COMPETENCY (The following is a list of general or lead-in questions, which are intended to be used as a guide to assess competency of laboratory personnel. Additional specific questions should be used to determine the technical competency of the personnel performing the measurements, when appropriate. More probing questions should be asked of the person responsible for and signing the report of measurements.)

Questions to ask: (The assessor should check Y (yes) or N (no) based on his/her belief that the laboratory personnel have provide the proper responses to the specific question(s).)

Y	N	N/A	85. Is there sufficient training and supervision in place to ensure technical competency of the personnel performing the measurements?	
Y	N	N/A	86. Has at least one laboratory person demonstrated appropriate working knowledge of each of the documents under Section 1, above, with others demonstrating a working knowledge of documents used for specific tests, as appropriate?	
Y	N	N/A	87. Are laboratory personnel able to obtain recent and appropriate interpretations of the FCC Rules?	
Y	N	N/A	88. Does the test person know how to perform radiated emission exploratory measurements?	
Y	N	N/A	89. Does the test person know the difference between exploratory and final radiated emission measurements?	
Y	N	N/A	90. Does the test person understand how exploratory test results relate to final radiated emission measurements?	
Y	N	N/A	91. Does the test person know how to determine if the emission is from the EUT or an ambient?	
Y	N	N/A	92. Does the test person know how to handle an emission that is close to or coincident with an ambient?	
Y	N	N/A	93. Does the test person know how to identify and avoid potential overload conditions of the test instrumentation?	